Mathematical Studies: Project 1 – Topic/Thesis Form

Name \_Amber Roberts\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Topic: Frequency Interference Patterns of Laser’s

2. Reason for choice(at least one paragraph)

I chose because I find physics very interesting and I plan on having it as my major in college. I also have always found lasers particularly interesting as well; many people don’t know why a green laser is green or why a red laser is red. But it is because both lasers operate on different frequencies. Over the summer I read a book called *Entanglement the Greatest Mystery in Physics* and found it mind blowing. The concept of entanglement is where two quanta of energy react instantaneously with each other no matter where they are, or how far apart they are from each other. I plan on testing this with an experiment similar to Thomas Young’s double-slit experiment. Where I have different sizes of lead that I shine the lasers through to create an interference pattern. I will measure the difference of spacing in each trial and hopefully this will give me a better understanding of entanglement.

3. Research Question

How do the interference patterns of red and green lasers differ with different sizes of lead? What is the significant of this and how does this relate to entanglement?

4. Title of your project.

Interference Patterns